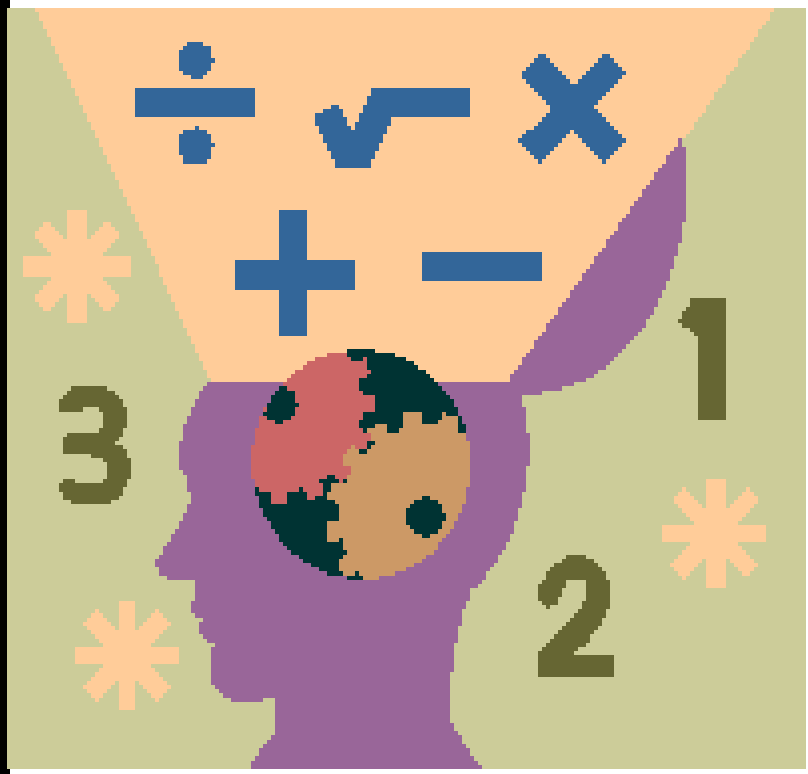
MATHEMATICS

Block 1

2nd Level



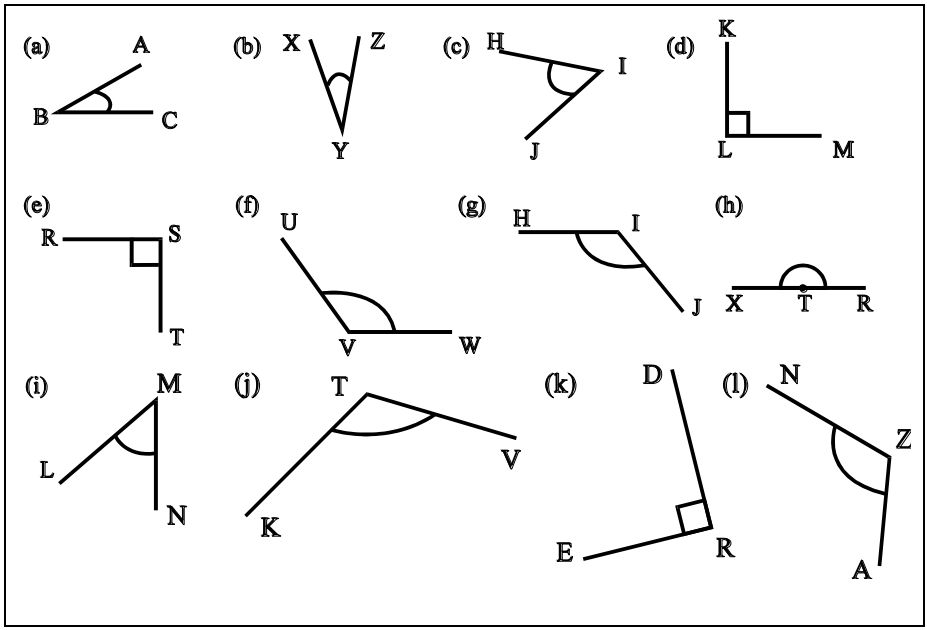
Angles

Exercise 1

1 Copy the following table into your jotter.

	Type of Angle	Name of Angle
(a)	acute	$A\hat{B}C$
(b)		
(c)		
(d)		
(e)		
(f)		
(g)		
(h)		
(i)		
(j)		
(k)		
(l)		

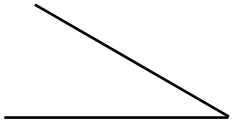
Use the pictures opposite to complete your table.


(a)
A
B
C
(b)
X
Z
Y
(c)
H
I
J
(d)
K
L
M
(e)
R
S
T
(f)
U
V
W
(g)
H
I
J
(h)
X
T
R
(i)
M
L
N
(j)
T
V
K
(k)
D
E
R
(l)
N
Z
A

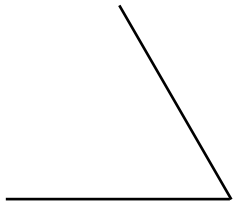
Exercise 2

1 Using a protractor measure the following angles

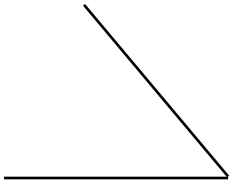
a



b



c



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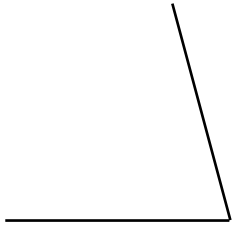
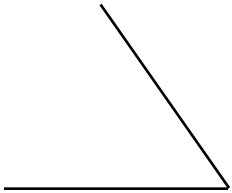
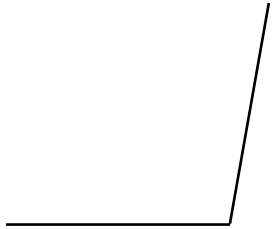


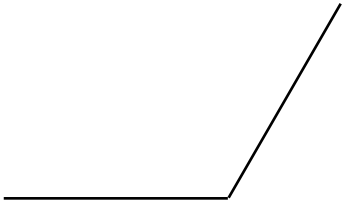
e



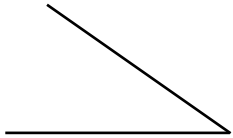
f



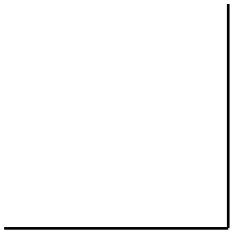
g



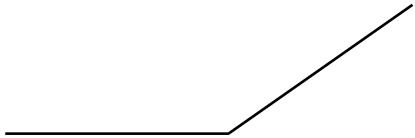
h



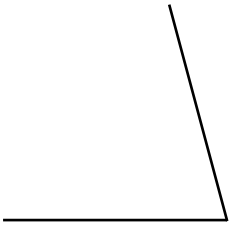
I



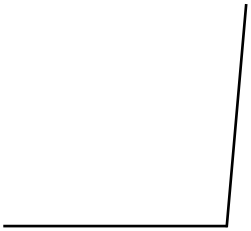
j



k

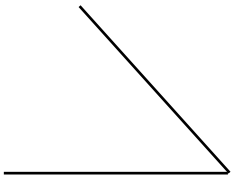


l

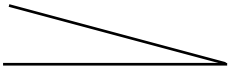


m

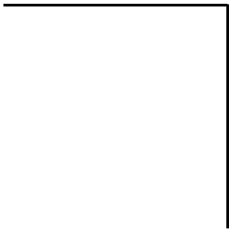
n



o



p



Exercise 3

1 Using a protractor draw the following angles

a 60^o	**b** 45^o	**c** 90^o
d 110^o	**e** 160^o	**f** 80^o
g 125^o	**h** 10^o	**I** 150^o
j 175^o	**k** 100^o	**l** 25^o

Introduction to Equations

Exercise 1

Find the missing number

1 3 → +3 → □

2 21 → +4 → □

3 14 → +7 → □

4 5 → +8 → □

5 6 → -4 → □

6 8 → -3 → □

7 4 → +13 → □

8 7 → -6 → □

9 81 → -20 → □

10 99 → -15 → □

Exercise 2

Find the missing number

1 □ → +3 → 16

2 □ → +5 → 15

3 □ → -4 → 8

4 □ → -9 → 32

5 □ → +8 → 48

6 □ → -2 → 7

7 □ → +2 → 11

8 □ → -3 → 23

9 □ → +6 → 45

10 □ → -7 → 60

Exercise 3

1 3 — x2 — ☐

2 2 — x5 — ☐

3 4 — x4 — ☐

4 5 — x8 — ☐

5 6 — x3 — ☐

6 8 — x2 — ☐

7 4 — x6 — ☐

8 7 — x5 — ☐

9 8 — x9 — ☐

10 9 — x10 — ☐

Exercise 4

Find the missing number

1 ☐ — x2 — 16

2 ☐ — x3 — 15

3 ☐ — x4 — 28

4 ☐ — x8 — 32

5 ☐ — x6 — 48

6 ☐ — x9 — 18

7 ☐ — x7 — 21

8 ☐ — x4 — 24

9 ☐ — x9 — 45

10 ☐ — x10 — 60

Exercise 5

Find the missing number

1 $\square$ + 5 = 8	**2** $\square$ + 7 = 12	**3** $\square$ + 9 = 15
4 $\square$ + 6 = 10	**5** $\square$ + 5 = 12	**6** $\square$ + 1 = 13
7 $\square$ + 7 = 18	**8** $\square$ + 2 = 19	**9** $\square$ + 9 = 25
10 $\square$ + 14 = 18	**11** $\square$ + 3 = 4	**12** $\square$ + 1 = 16
13 $\square$ + 15 = 18	**14** $\square$ + 7 = 7	**15** $\square$ + 8 = 25
16 $\square$ + 20 = 80	**17** $\square$ + 17 = 20	**18** $\square$ + 6 = 35
19 $\square$ + 50 = 100	**20** $\square$ + 12 = 20	**21** $\square$ + 9 = 11
22 $\square$ + 2 = 10	**23** $\square$ + 7 = 10	**24** $\square$ + 9 = 30
25 $\square$ + 5 = 20	**26** $\square$ + 14 = 30	**27** $\square$ + 15 = 20
28 $\square$ + 13 = 20	**29** $\square$ + 7 = 40	**30** $\square$ + 90 = 100

Exercise 6

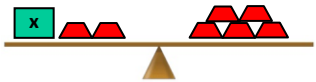
Find the missing number

1 ☐ - 5 = 10	**2** ☐ - 7 = 10	**3** ☐ - 9 = 10
4 ☐ - 6 = 12	**5** ☐ - 5 = 20	**6** ☐ - 1 = 13
7 ☐ - 7 = 8	**8** ☐ - 2 = 9	**9** ☐ - 9 = 5
10 ☐ - 14 = 18	**11** ☐ - 3 = 14	**12** ☐ - 1 = 13
13 ☐ - 15 = 8	**14** ☐ - 7 = 7	**15** ☐ - 8 = 15
16 ☐ - 20 = 60	**17** ☐ - 7 = 20	**18** ☐ - 6 = 30
19 ☐ - 50 = 10	**20** ☐ - 12 = 20	**21** ☐ - 9 = 11
22 ☐ - 2 = 8	**23** ☐ - 7 = 3	**24** ☐ - 9 = 1
25 ☐ - 5 = 0	**26** ☐ - 14 = 36	**27** ☐ - 15 = 20
28 ☐ - 13 = 20	**29** ☐ - 7 = 33	**30** ☐ - 90 = 10

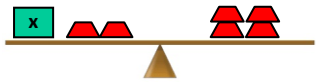
Exercise 7

For each picture write down an equation and then solve to find the weight of the box

1



2



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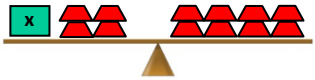
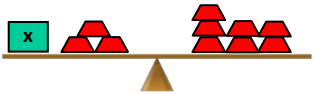


4

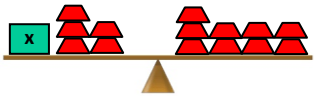
5



6

7

8



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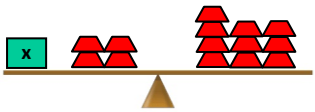

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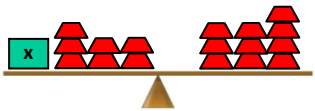


Exercise 8

Solve the following equations by finding the missing number:

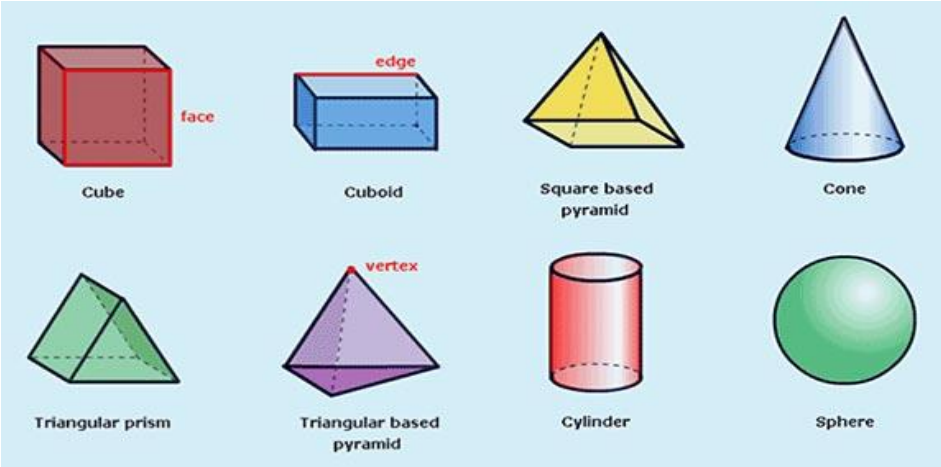
1.	$x + 3 = 5$	**2.**	$x + 5 = 9$	**3.**	$x + 2 = 8$
4.	$x - 3 = 9$	**5.**	$x + 4 = 8$	**6.**	$x - 2 = 4$
7.	$x + 1 = 9$	**8.**	$x + 4 = 5$	**9.**	$x + 9 = 12$
10.	$x + 4 = 10$	**11.**	$x - 5 = 14$	**12.**	$x - 7 = 4$
13.	$x + 9 = 20$	**14.**	$x + 1 = 1$	**15.**	$x - 3 = 0$

Exercise 9

Solve the following equations by finding the missing number:

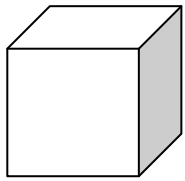
1.	$a + 1 = 10$	**2.**	$b + 7 = 12$	**3.**	$c + 10 = 11$
4.	$d + 2 = 13$	**5.**	$e - 3 = 14$	**6.**	$f + 12 = 15$
7.	$q + 6 = 26$	**8.**	$r + 8 = 27$	**9.**	$s + 7 = 25$
10.	$t - 9 = 30$	**11.**	$u + 10 = 42$	**12.**	$v - 10 = 50$
13.	$a - 1 = 5$	**14.**	$b - 3 = 6$	**15.**	$c - 2 = 5$

Nets



Exercise 1

1 Here is a picture of a cube

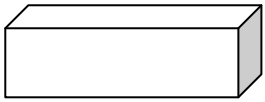


a How many faces are there?

b How many edges does the cube have?

c How many vertices are there (corners)?

2 Here is a picture of a cuboid

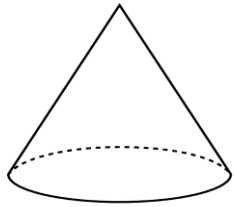


a How many faces are there?

b How many edges does the cube have?

c How many vertices are there (corners)?

3 Here is a picture of a cone

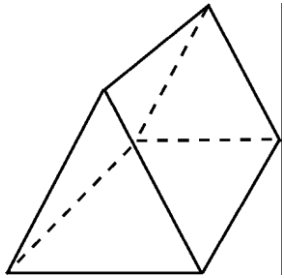


a How many faces are there?

b How many edges does the cube have?

c How many vertices are there (corners)?

4 Here is a picture of a triangular prism



a How many faces are there?

b How many edges does the cube have?

c How many vertices are there (corners)?

5 Which shape is being described in each statement?

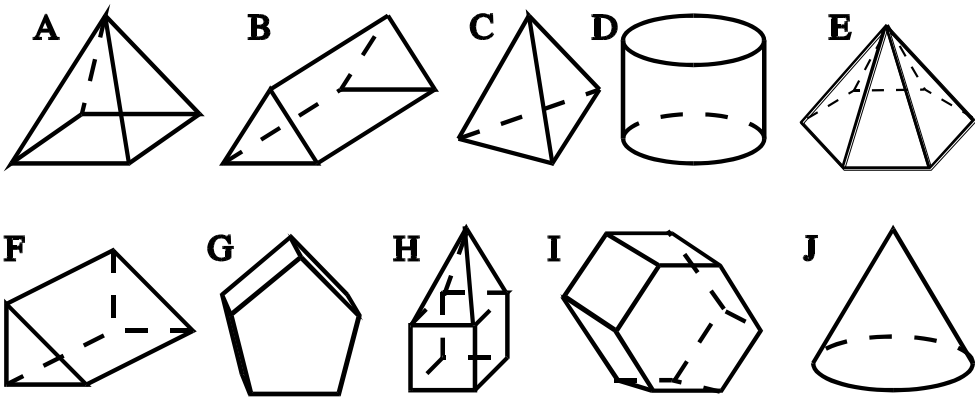
a It has six faces. All faces are the same size. It has six corners.

b It has five faces (three rectangles and two triangles). It has six corners.

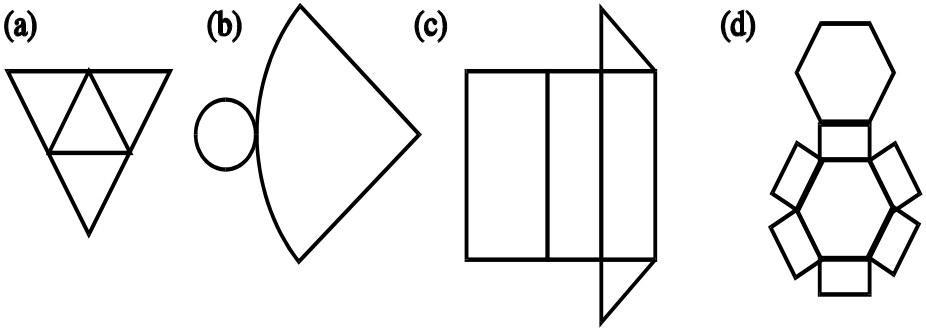
c It has only one face. It is curved so it rolls.

d It has only one edge. It has two faces (one flat one curved).

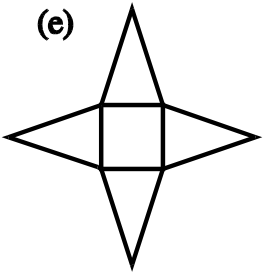
Exercise 2



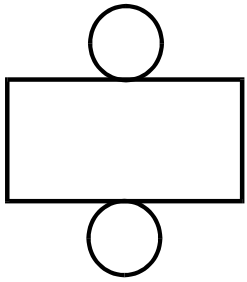
Here are ten different 3D shapes (A-J), can you match them with the nets (a-j)



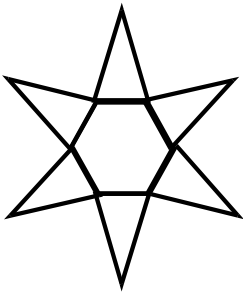
(e)



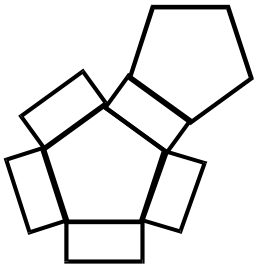
(f)



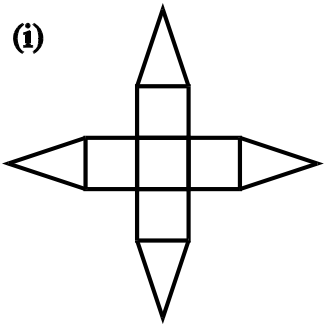
(g)



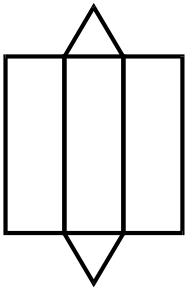
(h)



(i)



(j)



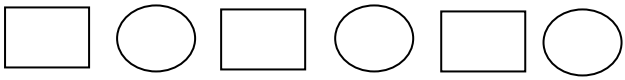
Exercise 3 (worksheet required)

On each net you must first decide whether or not you think it will make a proper 3-D shape or not. Once you have ticked the appropriate box you can cut it out to find out if you were correct or not.

Sequences

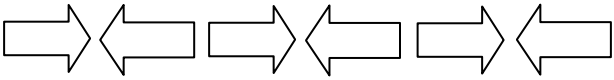
Exercise 1

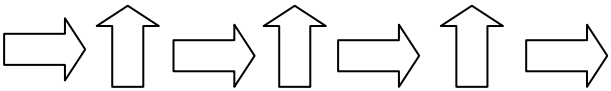
Copy these patterns into your jotter and draw the next 2 shapes

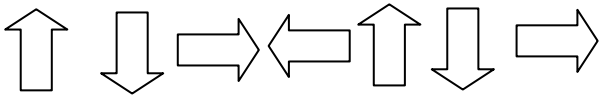
1  ____ ____

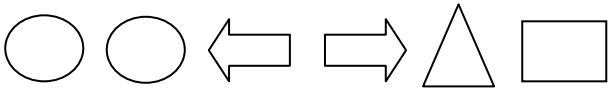
2  ____ ____

3  ____ ____

4  ____ ____

5  ____ ____

6  ____ ____

7  ____ ____

Exercise 2

Copy these sequences into your jotter and write down the next 2 numbers

1	1, 2, 3, 4, …., ….	**2**	2, 4, 6, 8, …., ….	**3**	3, 5, 7, 9, …., ….
4	1, 4, 7, 17, …., ….	**5**	5, 8, 11, 14, …., ….	**6**	7, 11, 15, 19, …., ….
7	23, 22, 21, 20, …., ….	**8**	19, 17, 15, 13, …., ….	**9**	41, 43, 45, 47, …., ….
10	32, 34, 36, 38, …., ….	**11**	16, 19, 22, 25, …., ….	**12**	17, 20, 23, 26, …., ….
13	39, 36, 33, 30, …., ….	**14**	51, 48, 45, 42, …., ….	**15**	21, 25, 29, 33, …., ….
16	52, 56, 60, 64, …., ….	**17**	4, 5, 6, 7, …., ….	**18**	9, 10, 11, 12, …., ….
19	4, 6, 8, 10, …., ….	**20**	6, 9, 12, 15, …., ….	**21**	10, 15, 20, 25, …., ….
22	5, 7, 9, 11, …., ….	**23**	8, 11, 14, 17, …., ….	**24**	21, 19, 17, 15, …., ….
25	36, 30, 24, 18, …., ….	**26**	10, 13, 16, 19, …., ….	**27**	23, 19, 15, 11, …., ….

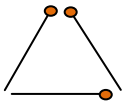
Exercise 3

1 Copy and complete each table

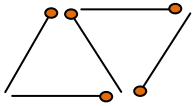
a

Design Number	1	2	3
Number of matches			

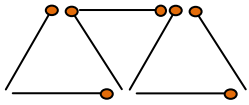
Design1



Design 2



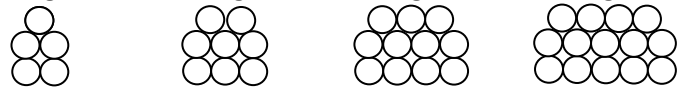
Design 3



b

Design Number	1	2	3	4
Number of circles				

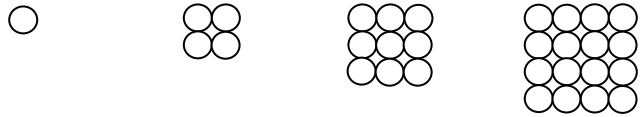
Design 1 Design 2 Design 3 Design 4



c

Design number	1	2	3	4
Number of circles				

Design 1 Design 2 Design 3 Design4



d

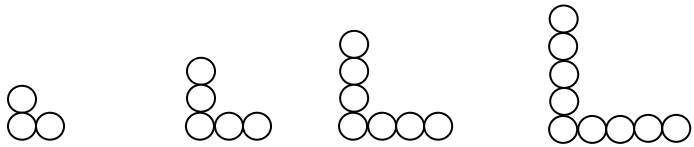
Design number	1	2	3	4
Number of circles				

Design 1 Design 2 Design 3 Design 4

e

Design number	1	2	3	4
Number of circles				

Design 1 Design 2 Design 3 Design 4



i How many circles will be needed for design 5 ?

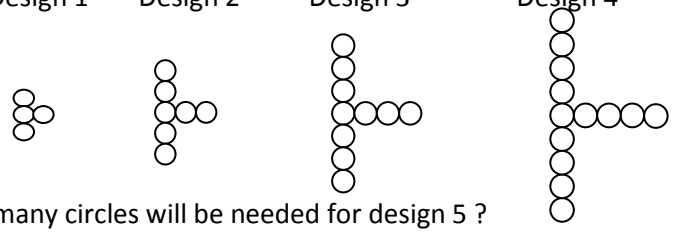
ii How many circles will be needed for design 10 ?

iii What is the rule for working out the number of circles, if you know the design number?

f

Design number	1	2	3	4
Number of circles				

Design 1 Design 2 Design 3 Design 4



i How many circles will be needed for design 5 ?

ii How many circles will be needed for design 10 ?

iii What is the rule for working out the number of circles, if you know the design number?

Exercise 4

For each question:

a Copy and complete the table

b Write down the **rule** for the table

1

A	1	2	3	4	5	6		10
B	2	4	6					

Rule:

2

C	1	2	3	4	5	6		10
D	3	6	9					

Rule:

3

E	1	2	3	4	5	6		10
F	4	8	12					

Rule:

4

G	1	2	3	4	5	6		10
H	5	10	15					

Rule:

5

I	1	2	3	4	5	6		12
J	3	5	7					

Rule:

6

K	1	2	3	4	5	6		12
L	4	7	10					

Rule:

7

M	1	2	3	4	5	6		9
N	4	6	8					

Rule:

8

P	1	2	3	4	5	6		12
Q	5	8	11					

Rule:

9

R	1	2	3	4	5	6		20
S	4	9	14					

Rule:

10

T	1	2	3	4	5	6		11
V	5	11	17					

Rule:

11

W	1	2	3	4	5	6		13
X	8	11	14					

Rule:

12

Y	1	2	3	4	5	6		10
Z	8	13	18					

Rule:

13

A	1	2	3	4	5	6		15
B	10	12	14					

Rule:

14

C	1	2	3	4	5	6		10
D	10	13	16					

Rule:

15

A	1	2	3	4	5	6		20
B	5	8	11					

Rule:

16

C	1	2	3	4	5	6		25
D	6	8	10					

Rule:

17

E	1	2	3	4	5	6		50
F	1	3	5					

Rule:

18

G	1	2	3	4	5	6		100
H	1	4	7					

Rule:

19

J	1	2	3	4	5	6		50
K	4	7	10					

Rule:

20

L	1	2	3	4	5	6		25
M	5	9	13					

Rule: